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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,025	09/23/2005	Seiji Tanimoto	277030US0PCT	7360

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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER
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BERNSHTEYN, MICHAEL

ART UNIT	PAPER NUMBER
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1796

NOTIFICATION DATE	DELIVERY MODE
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03/18/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/550,025	<b>Applicant(s)</b> TANIMOTO ET AL.	
	<b>Examiner</b> MICHAEL M. BERNSHTEYN	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 13-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 13-27 is/are rejected.
- 7) ☒ Claim(s) 26 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This Office Action follows a response filed on November 16, 2009. Claim 19 has been amended; claims 21-27 have been added; no claims have been cancelled.
2. Claims 1-5 and 13-27 are pending.

### ***Claim Objections***

3. Claim 26 is objected to because of the following informalities: line 1 contains "having a has" wherein the word "has" should be deleted. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 26 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 26 recites "The (meth)acrylic resin emulsion according to claim 1, having a has tensile strength of from 110 to 300 kg/cm<sup>2</sup>" while US'484 , page 5, paragraph [0052] recites "Importantly, the film of the (meth)acrylic resin emulsion of the invention formed at 20<sup>0</sup>C and 65% RH to have a thickness of 500 µm has a tensile strength (the method of measuring it is described herein under) of at least 100 kg/cm<sup>2</sup>."

Therefore such limitation as "tensile strength" renders the claim indefinite because it is not clear how this property can be determined for the emulsion, and the

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scope of the claimed subject matter cannot be determined by one having ordinary skill in the art.

***Claim Rejections - 35 USC § 102***

5. The text of this section of Title 35 U.S.C. not included in this action can be found in a prior Office Action.

***Claim Rejections - 35 USC § 103***

6. The text of this section of Title 35 U.S.C. not included in this action can be found in a prior Office Action.

7. Claims 1-5 and 13 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kim et al. "Poly(vinyl alcohol) Stabilization of Acrylic Emulsion Polymers Using the Miniemulsion Approach", *Macromolecules*, 2003; 36 (15), p. 5573-5579), for rationale recited in paragraph 6 of Office Action dated May 19, 2009.

8. Claims 25-27 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kim et al. "Poly(vinyl alcohol) Stabilization of Acrylic Emulsion Polymers Using the Miniemulsion Approach", *Macromolecules*, 2003; 36 (15), p. 5573-5579).

With regard to the limitations of claim 25, Kim discloses a (meth)acrylic resin emulsion and a method for producing of (meth)acrylic resin emulsion. The emulsion consists of **n-butyl acrylate** and **methyl methacrylate** (50/50 wt %) employing

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poly(vinyl alcohol) (PVA) as a stabilizer and hexadecane (HD) as a costabilizer (abstract).

With regard to a tensile strength instantly claimed in claim 26, Kim is silent about it. However, in view of substantially identical (meth)acrylic resin emulsion between Kim and instant claims, it is the examiner position that Kim's (meth)acrylic resin emulsion inherently possesses this property. Since the USPTO does not have equipment to do the analytical test, the burden is now shifted to the applicant to prove otherwise. **In re Fitzgerald** 619 F 2d 67, 70, 205 USPQ 594, 596 (CCPA 1980).

Even assuming that the claims are not anticipated by the reference, it would have been obvious to one of ordinary skill in the art to make the polymer having the claimed property using the claimed process because it appears that the reference generically embrace the claimed subject matter and the person of ordinary skill in the art would have expected all embodiments of the reference to work. Applicants have not demonstrated that the differences, if any, between the claimed subject matter and the subject matter of the prior art examples give rise to unexpected products.

With regard to the limitations of claim 27, Kim discloses that the poly(vinyl alcohol) (PVA) has a degree of hydrolysis (DH) (or a degree of saponification) 87-89%, and a degree of polymerization (DP = 500), which are clearly within the claimed ranges (p. 5574, the right column, Experimental Section).

9. Claims 14-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over "Poly(vinyl alcohol) Stabilization of Acrylic Emulsion Polymers Using the Miniemulsion

Approach", *Macromolecules*, 2003; 36 (15), p. 5573-5579) as applied to claims 1-5 and 13 above and further in view of Tanimoto et al. (JP 2002-308939 A).

The disclosure of Kim's reference resided in § 7 is incorporated herein by reference.

With regard to the limitations of claims 14-24, Kim discloses a method for producing a (meth) acrylic resin emulsion. The recipe used to prepare the various miniemulsions comprising several different formulation components is shown in Table 1. PVA was dissolved by heating at 90°C for 3 h in deionized water (ca. 6 wt %), and the solution was filtered using a 200 mesh screen. The solids content of the PVA solution was determined gravimetrically and adjusted to 5.9 wt % by adding deionized water.

*Miniemulsions stabilized with HD.* A specific amount of HD was mixed with the monomers (BA and MMA). An aqueous PVA solution and DI water were then added to the monomer mixture and stirred for 10 min to prepare a crude emulsion for 10 min prior to subjecting the system to high shear.

*Miniemulsions stabilized with CA.* A specific amount of CA was mixed with the PVA solution and DI water and then stirred for 2 h at 70 °C. After cooling, undissolved CA particles were found for the higher amounts of CA (0.833 and 1.744 g). Monomers were added and stirred with a magnetic bar for 24 h to completely dissolve the CA particles and to obtain a good crude emulsion. The crude emulsions with HD or CA were sonified using a Branson Sonifier (model 450) at a 70% duty cycle and a power setting of 8 for 10 min accompanied by continuous magnetic stirring in an ice bath. All miniemulsion polymerizations were performed in a 500 ml four-neck flask equipped with

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a reflux condenser, nitrogen gas inlet tube, and Teflon stirrer (~200 rpm) for 24 h at 60°C (page 5575).

With regard to the limitations of claims 14-24, Kim does not disclose the use of an iron compound.

Tanimoto discloses that an iron compound is further added to the system (abstract) in the amount of from 1 to 50 ppm, which is exactly within the claimed range (page 3, [0017], [0018]).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the iron compound in the claimed amount, as taught by Tanimoto in Kim's method for producing the (meth) acrylic resin emulsion in order to achieve a good control of the polymerization (page 3, [0017], [0018]), and thus to arrive at the subject matter of instant claims 14-24.

It is noted that the Tanimoto's reference was already used for the rejection under 35 U.S.C. §103(a) in the Office action dated July 22, 2008.

### ***Response to Arguments***

10. Applicant's arguments filed on November 16, 2009 have been fully considered but they are not persuasive.

11. It appears that the focal Applicants argument resides in the contention that Kim contains no disclosure of any iron compounds that are used as a reaction catalyst, and processes for making the presently claimed emulsions have an iron compound present during the emulsification (pages 8-9).

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**12.** Regarding the (meth)acrylic resin emulsion limitations in view of substantially identical vinyl alcohol polymer having the same degrees of saponification and of polymerization, and the dispersoid, which is a polymer selected from the group consisting of an acrylate monomer unit and a methacrylate monomer unit being used by both Kim and the applicant, it is the examiner position to believe that the product, i.e. the (meth)acrylic resin emulsion of Kim is substantially the same as the (meth)acrylic resin emulsion recited in claim 1, even though obtained by a different process, consult ***In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).**

Since the USPTO does not have proper equipment to do the analytical test, the burden is now shifted to the applicant to prove otherwise.

“[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” **In re Thorpe**, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

**13.** With regard to Applicants arguments that Kim does not qualify as prior art under 35 U.S.C. § 102(b) because the effective filing date of the present application is March 31, 2004 (PCT/JP04/004600), which is within the year of the publication date of Kim: July 4, 2003 (page 7), it is noted that it was an obvious typing error and in current Office Action Kim’s reference is qualified as prior art under 35 U.S.C. § 102(a) (see paragraph 7 above).



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14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL M. BERNSHTEYN whose telephone number is (571)272-2411. The examiner can normally be reached on M-Th 8-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael M. Bernshteyn/  
Examiner, Art Unit 1796

/M. M. B./  
Examiner, Art Unit 1796

/David Wu/  
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